

Claims

- [c1] A screen tooling for a fiber preforming process, the screen tooling having a coating system fused to a surface thereof, the coating system comprising a surface layer of a porcelain enamel composition.
- [c2] The screen tooling according to claim 1, wherein the porcelain enamel composition comprises quartz, borax, boric oxide, potassium nitrate, sodium silicofluoride and manganese dioxide, and optionally titanium dioxide, antimony oxide, cobalt oxide, and/or barium oxide.
- [c3] The screen tooling according to claim 1, wherein the porcelain enamel composition comprises, in weight percent, about 39 to 52 quartz, about 15 to 24 borax, about 7 to 12 boric oxide, about 5 to 12 potassium nitrate, about 3 to 8 sodium silicofluoride, about 3 to 12 manganese dioxide, up to 12 titanium dioxide, up to 8 antimony oxide, up to 1 cobalt oxide, and up to 1 barium oxide.
- [c4] The screen tooling according to claim 1, wherein the porcelain enamel composition is fired from a dry mixture comprising quartz, dehydrated borax, boric acid, potas-

sium nitrate, sodium silicofluoride, and manganese dioxide, and optionally titanium dioxide, antimony oxide, cobalt oxide, and/or barium oxide.

- [c5] The screen tooling according to claim 1, wherein the porcelain enamel composition is fired from a dry mixture comprising, in weight percent, about 39 to 52 quartz, 15 to 24 dehydrated borax, 6 to 12 boric acid, 5 to 8 potassium nitrate, 3 to 6 sodium silicofluoride, and 3 to 12 manganese dioxide, up to 15 titanium dioxide, up to 3 antimony oxide, up to 1 cobalt oxide, and up to 1 barium oxide.
- [c6] The screen tooling according to claim 1, wherein the porcelain enamel composition is fired from a dry mixture comprising, in weight percent, about 46.5 quartz, about 21 dehydrated borax, about 7.5 boric acid, about 6 potassium nitrate, about 5 sodium silicofluoride, and about 11.5 manganese dioxide.
- [c7] The screen tooling according to claim 6, wherein the dry mixture further comprises about 2.5 antimony oxide.
- [c8] The screen tooling according to claim 1, wherein the screen tooling is a perforated member, the coating system being continuous over a surface of the perforated member.

- [c9] The screen tooling according to claim 8, wherein the coating system consists of the surface layer of the porcelain enamel composition.
- [c10] A screen tooling installed in a directed fiber preforming apparatus, the screen tooling comprising a perforated member and a continuous outer coating fused to a surface thereof, the coating consisting essentially of a porcelain enamel composition.
- [c11] The screen tooling according to claim 10, wherein the porcelain enamel composition comprises quartz, borax, boric oxide, potassium nitrate, sodium silicofluoride and manganese dioxide, and optionally titanium dioxide, antimony oxide, cobalt oxide, and/or barium oxide.
- [c12] The screen tooling according to claim 10, wherein the porcelain enamel composition comprises, in weight percent, about 39 to 52 quartz, about 15 to 24 borax, about 7 to 12 boric oxide, about 5 to 12 potassium nitrate, about 3 to 8 sodium silicofluoride, about 3 to 12 manganese dioxide, up to 12 titanium dioxide, up to 8 antimony oxide, up to 1 cobalt oxide, and up to 1 barium oxide.
- [c13] The screen tooling according to claim 10, wherein the porcelain enamel composition is fired from a dry mixture

comprising quartz, dehydrated borax, boric acid, potassium nitrate, sodium silicofluoride, and manganese dioxide, and optionally titanium dioxide, antimony oxide, cobalt oxide, and/or barium oxide.

- [c14] The screen tooling according to claim 10, wherein the porcelain enamel composition is fired from a dry mixture comprising, in weight percent, about 39 to 52 quartz, 15 to 24 dehydrated borax, 6 to 12 boric acid, 5 to 8 potassium nitrate, 3 to 6 sodium silicofluoride, and 3 to 12 manganese dioxide, up to 15 titanium dioxide, up to 3 antimony oxide, up to 1 cobalt oxide, and up to 1 barium oxide.
- [c15] The screen tooling according to claim 10, wherein the dry mixture comprises, in weight percent, about 46.5 quartz, about 21 dehydrated borax, about 7.5 boric acid, about 6 potassium nitrate, about 5 sodium silicofluoride, and about 11.5 manganese dioxide.
- [c16] The screen tooling according to claim 15, wherein the dry mixture further comprises about 2.5 antimony oxide.